

U. S. DEPARTMENT OF AGRICULTURE.
DIVISION OF POMOLOGY.
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CLASSIFICATION AND GENERIC SYNOPSIS

OF THE

WILD GRAPES OF NORTH AMERICA.

BY

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BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

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LETTER OF TRANSMITTAL.

I have the pleasure of transmitting herewith a synopsis of the genus *Vitis* of North America, as classified by T. V. Munson, of Denison, Tex. This is intended as preliminary to a complete monograph of the wild grapes of this country, which is now in course of preparation by this Division.

The extreme difficulty of the preparation of the original illustrations and certain field observations yet to be made, render the issuing of this synopsis necessary.

Very respectfully,

H. E. VAN DEMAN,
Chief of Division of Pomology.

Hon. EDWIN WILLITS,
Assistant Secretary.

INTRODUCTION.

DENISON, TEX., *August 1, 1890.*

After diligent study, during fifteen years, of all our species of native grapes so far as known, the following classification is reached. In order to learn the distribution of each species; its habitat; its general aspect in nature; its natural intermingling and relationships with other species; and to determine where most consistently to lay down the arbitrary lines of specific distinction (as all specific designation is, to greater or less extent arbitrary, since the law of unbroken connection in development of the organic kingdom is established beyond question), the author traveled at various times into almost all the States of the Union, accomplishing distances aggregating about forty-five thousand miles. In these journeys he was diligent in observing, in collecting, in taking notes, and in compiling the most complete and extensive herbarium of American Vites in existence. He established three successive vineyards containing all the leading varieties in cultivation, and also representative specimens from various regions of all the species, and produced many thousands of hybrids between the various species. He received the generous assistance of hundreds of able correspondents, among whom are a number of the leading European authors. He also grew from seed of each species, with few exceptions, vines which he carried forward to bearing age, studying every change and development. In addition to this he visited the leading herbaria in the United States having large collections of Vites, carefully noting each collection and comparing it with the others, and with his own. Having also consulted the chief writers upon American Grapes, and having noted the quite inexplicable tangle of synonymy among various writers, he now thinks the present classification as nearly natural and complete as it is possible to make it in the present state of knowledge; but is ready at any moment to accept new facts, and give them due recognition in their bearing upon the classification. This classification could not have been reached by the study of herbarial specimens alone. Many biological characteristics have been used. While these, in some cases, require a different arrangement than those of merely dry specimens would warrant, yet the result must be of far greater value, viewed from a viticultural stand-point.

This is the same arrangement as that observed in the monograph prepared for the Division of Pomology, Department of Agriculture.

T. V. MUNSON.

CLASSIFICATION.

Genus, **VITIS**, Tournefort (Linnæus *pro parti*).

[Explanation: H.—Hardy north; H. H.—Half-hardy north; T.—Tender north.]

SECTION I.—*Euvitis*, Planchon.

	Specific number.
Series 1. <i>Ripariæ</i>.	
<i>Vitis rupestris</i> (Scheele), H	1
<i>Vitis riparia</i> (Michaux), H. (<i>V. palmata</i> , Vahl).....	2
<i>Vitis Solonis</i> (Hort. Berol.), H	3
<i>Vitis Doaniana</i> (Munson), H.	4
All excellent for hybridizing other species.	
Series 2. <i>Occidentales</i>.	
<i>Vitis Arizonica</i> (Engelmann), H. H., the "Cañon Grape" of Arizona.....	5
<i>Var. glabra</i> (Munson), H. H.....	
<i>Vitis Girdiana</i> (Munson), T., the south California species; mildews.....	6
<i>Vitis Californica</i> (Bentham), T., the north California species; mildews.....	7
Series 3. <i>Coriaceæ</i>.	
<i>Vitis Champini</i> (Planchon), H. H., excellent, southwest Texas.....	8
<i>Vitis candicans</i> (Engelmann), H. H., "Mustang Grape" of Texas	9
<i>Vitis coriacea</i> (Shuttleworth), T., Florida.....	10
Series 4. <i>Labruscæ</i>.	
<i>Vitis labrusca</i> (Linnæus), H., to which Ives, Concord, etc., belong.....	11
Series 5. <i>Æstivales</i>.	
<i>Vitis vinifera</i> (Linnæus), T., European and Asiatic grape	(a)
<i>Vitis Bourquiniana</i> (Munson), H. H., South European, Herbemont, etc.....	(b)
<i>Vitis Linccumii</i> (Buckley), H., "Texas Post-Oak Grape," large, fine.....	12
<i>Var. glauca</i> (Munson), H., northern Texas and Missouri.....	
<i>Vitis bicolor</i> (Leconte), H., "Blue Grape," "Winter Grape," of Ohio, Michigan.....	13
<i>Vitis æstivalis</i> (Michaux), A., Tennessee, Virginia, Georgia, etc	14
<i>Vitis Simpsonii</i> (Munson), T., Florida.....	15
Series 6. <i>Cordifoliæ</i>.	
<i>Vitis cordifolia</i> (Michaux), H., "Frost Grape," "Possum Grape".....	16
<i>Vitis rubra</i> (Michaux), (<i>V. palmata</i> , Engelmann), H., southern Illinois, ornamental.....	17
<i>Vitis monticola</i> (Buckley), H. H., "Sweet Mountain Grape," southwestern Texas.....	18

Series 7. *Cinerascentes*.

<i>Vitis Virginiana</i> (Munson), H., mountain streams southwestern Virginia....	19
<i>Vitis Berlandieri</i> (Planchou), H. H., from chalky soils of southwestern Texas.	20
<i>Vitis cinerea</i> (Engelmann), H., "Sweet Winter Grape," Illinois, Texas, and eastward	21
<i>Var. floridana</i> (Munson), Florida and along the Gulf coast	
<i>Vitis Caribæa</i> (De Candolle), 'T., West Indies and eastern Mexico.....	22
<i>Vitis Blancoii</i> (Munson), T., Sierra Madre Mountains, Mexico.....	23

SECTION II.—*Puncticulosis*, Munson.Series 1. *Muscadinæ*.

<i>Vitis rotundifolia</i> (Michaux), H. H., "Muscadine Grape" of the South.....	24
<i>Vitis Munsoniana</i> (Simpson), H. H., "Bird Grape," ("Mustang Grape," Chapman), southern Florida.....	25

GENERIC SYNOPSIS OF THE NATIVE GRAPES OF THE UNITED STATES OF NORTH AMERICA.

By T. V. MUNSON.

SECTION I.—EUVITIS, Planchon.

Bark, shedding in fibrous plates, outer bark on annual wood distinctly striated, without lenticels; tendrils forked; nodes provided with diaphragm, internodes with true pith; flowers clustered in a true thyrus; seeds pyriform.

Series 1. *Ripariæ*, Planchon.

Plant: shrubby or climbing moderately; seedlings first year erect or ascending, very vigorous; *tips of young growing branches more or less enveloped in quickly enlarging, but slowly unfolding young leaves.*

Roots: one-year seedlings axial, tapering from collar downward; branches slender, wiry, rarely transversely wrinkled, resistant to *Phylloxera*.

Wood: annual, cylindrical, or slightly angled, smooth or tomentose; *diaphragm thin and plane*; tendrils short, bifid, rather weak, intermittent, soon shed if not clinging to some object; buds mature or dormant, small.

Leaves: *stipules large, lanceolate, membranaceous*; blade small to medium, broadly cordate, folding or cupping toward upper face; basal sinus broadly or narrowly Ω -shaped, except in *V. rupestris* very broad, yet acute at insertion of petiole.

Clusters: small, generally compact, shouldered; peduncle very short; pedicels thick.

Berries: small to medium in *V. Doaniana*, bearing much prunose bloom, vinous and pure in taste; persistent.

Seeds: with small or depressed chalaza and raphe; germination quick.

Germination, foliation, inflorescence, ripening of fruit, very early; growth from cuttings easy; native on high sand-banks along rivers, lakes, and beds of sandy ravines; in cultivation doing well in any but very limy soils; *exceedingly hardy in withstanding cold.*

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| 1. <i>Ripariæ</i> | { | 1. <i>Vitis rupestris</i> , Scheele, southwestern Texas, Ozark-Ridge; Central Tennessee. |
| | { | 2. <i>Vitis riparia</i> , Michaux, all Northern States and Canada east of Rocky Mountains. |
| | { | 3. <i>Vitis Solonis</i> , Hort. Berol., northwestern Texas and New Mexico. |
| | { | 4. <i>Vitis Doaniana</i> , Munson, northwestern Texas and New Mexico. |

Series 2. *Occidentales*, Munson.

Plant: first year generally erect; *Vitis Arizona* shrubby or climbing moderately; *V. Girdiana* and *V. Californica* climbing vigorously; growing tips very little enveloped in expanding leaves.

Roots: one-year seedlings axial; in *V. Arizona* tapering, slender, less wiry than in Series 1; resistant; in *V. Girdiana* and *V. Californica* softer and less resistant.

Wood: annual scarcely angled, or cylindrical, tomentose; diaphragm medium, slightly bi-concave; tendrils bifid or trifid, intermittent; buds small to medium, *whitish tomentose ia expanding*.

Leaves: stipules medium to small, long cordate; blade small to medium, broadly (in *V. Californica*) or narrowly cordate, silky tomentose or glabrous in part of *V. Arizona*; basal sinus rounded or acute; blade generally plane, in *V. Arizona* margin curving toward lower face.

Cluster: small to medium, mostly compact, more open and larger in *V. Girdiana*; peduncle slender, of medium length; pedicels slender, thickest in *V. Californica*.

Berries: small, black, with thin prunose bloom in *V. Arizona* and *V. Girdiana*, abundant in *V. Californica*; pure, vinous, sweet, very persistent.

Germination, foliation, inflorescence and ripening of fruit, medium to late; growth from cuttings easy; *leaves very sensitive to mildew*, and *fruit subject to black-rot*; *V. Arizona* withstanding zero temperature; *V. Girdiana* and *V. Californica* enduring but little cold—the *tenderest of all our species*; native in sandy soils along streams.

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| 2. <i>Occidentales</i> | { | 5. <i>Vitis Arizona</i> , Engelmann, var. <i>glabra</i> , Munson, western Texas, New Mexico, Arizona, and Chihuahua, Mexico.
6. <i>Vitis Girdiana</i> , Munson, all California south of Mojave Desert, rare north of that.
7. <i>Vitis Californica</i> , Benthams, central and northern California, and southern Oregon on Rogue River. |
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Series 3. *Coriaceæ*, Munson.

Plant: first year spindling, reclining, with age climbing medium to very high; tips of growing shoots not enveloped in the slowly enlarging, quickly unfolding young leaves.

Roots: one-year seedlings non-axial and enlarging downward a foot or more from the collar (except in *V. Champini* somewhat axial and tapering downward); transversely wrinkled.

Wood: young, densely whitish or rusty tomentose (in *V. Champini* tomentum thin); annual, generally cylindrical; *tomentum persistent through first year*; diaphragm bi-concave; buds small to medium, subglobose, or conical in *V. coriacea*; tendrils intermittent, strong, tomentose, bifid or trifid.

Leaves: stipules small in *V. coriacea*, to medium or large, broad cordate, pinkish or crimson, tomentose in *V. candicans*; blade small to

medium, broadly cordate, generally cupping toward lower face; basal sinus Λ -shaped or wanting, with truncate base; surface slightly rugose, dark green, thick, leathery; young leaves at first appearance pale pinkish, lower face covered with whitish or rusty tomentum, except in *V. Champini* thinly tomentose or pubescent.

Cluster: *small, loose, simple, or forked*; peduncle medium; pedicels short, thick.

Berries: *medium to very large, without bloom, very persistent; skin thick, more or less pungent, not musky or "foxy, pulpy."*

Seeds: chalaza and raphe depressed.

Germination, foliation, inflorescence, ripening of fruit, early to medium, enduring great drought and little cold; cuttings rooting poorly in *V. candicans* and *V. coriacea*, but easily in *V. Champini*; resistant to phylloxera; natively found chiefly on limy soils.

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| 3. <i>Coriacea</i> | { | 8. <i>Vitis Champini</i> , Planchon, southwest Texas. |
| | | 9. <i>Vitis candicans</i> , Engelmann, east of one hundredth meridian in Texas. |
| | | 10. <i>Vitis coriacea</i> , Shuttleworth, central and southern Florida. |

Series 4. *Labruscae*, Planchon.

Vine: strong, stocky, climbing well; tips of growing shoots little enveloped in rapidly growing and unfolding leaves; seedlings first year feeble, declining.

Roots: one year seedlings non-axial and enlarging downward, little or scarcely tapering, transversely wrinkled, not fully resistant to phylloxera.

Wood: young, densely tomentose, often bearing stiff spinous pubescence, cylindrical; annual, mature, reddish brown; diaphragm medium thick, bi-concave; buds medium broad, sub-triangular, with acute summit; *tendrils continuous*, bifid or trifid, strong.

Leaves: at first rosy pink, densely tomentose; stipules long-cordate or lance-shaped, thinly tomentose; blade large, broad cordate, plane or cupping toward upper face; basal sinus narrowly Λ -shaped or lobes lapping; upper face rugose, dark green; lower face densely whitish or rusty woolly.

Clusters: small to medium, compact, simple or shouldered; pedicels thick; peduncle short to medium.

Berries: medium to large, covered with prunose bloom, *musky* ("foxy") *in odor and taste*, pulpy; little persistent after ripening.

Seeds: chalaza and raphe sunken or obscure, upper end notched.

Germination, foliation, inflorescence, and ripening of fruit early to medium; cuttings growing easily; natural habitat, moist, loamy, sandy soil.

4. *Labruscae* 11. *Vitis labrusca*, Linnæus, Atlantic States and Tennessee.

Series 5. *Æstivales*, Planchon.

Vine: strong, stocky, climbing well; tips of growing shoots not covered with the quickly unfolding, slowly growing leaves; seedlings of first year vigorous, reclining.

Roots: one-year seedlings non-axial, enlarging downward, transversely wrinkled generally; resistant to phylloxera, in *V. vinifera* non-resistant.

Wood: young, tomentose or quite smooth in *V. bicolor*, sometimes bearing spinous pubescence near the joints, cylindrical; tendrils intermittent, mostly bifid; mature annual, pale or reddish-brown; diaphragms medium thick in *V. bicolor*, to very thick in *V. Simpsonii*, biconcave; buds dormant, medium to very large, subtriangular; opening buds rosy, crimson, or violet.

Leaves: stipules short, broad, rusty tomentose; blade medium to very large, broadly cordate, entire or lobed; basal sinus Λ -shaped; upper face slightly rugose, of a dark lively green; generally plane; lower face rusty-flocculent tomentose in *V. æstivalis* to ashy, felt-like tomentose in *V. Lincecumii* and *V. Simpsonii*, to bluish glaucous in *V. bicolor*, and *V. Lincecumii*, var. *glauca*.

Clusters: medium to large, mostly simple, with large shoulder; pedicels large, peduncle long.

Berries: small to large, with moderate prunose bloom, mostly astringent, sometimes very sweet and vinous; persistent in *V. vinifera* and *V. Bourquiniana*, much less in *V. bicolor*, *V. æstivalis*, and generally shedding easily when ripe in *V. Lincecumii*; often having white dots in native species of this series.

Seeds: chalaza, raphe, and beak generally prominent; long proportionally to breadth.

Germination, foliation, inflorescence, and ripening of fruit, medium to very late; cuttings usually growing with greatest difficulty, but in *V. vinifera* quite easily, and in *V. Bourquiniana* fairly well. Natively found in moderately high, warm, loamy, well-drained sandy soils.

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| 5. <i>Æstivales</i> | { | (a.) <i>Vitis vinifera</i> , Linnæus | } Exotic. |
| | | (b.) <i>Vitis Bourquiniana</i> , Munson | |
| | | 12. <i>Vitis Lincecumii</i> , Buckley. South Texas. var. <i>glauca</i> , Munson. North Texas to South Missouri. | |
| | | 13. <i>Vitis bicolor</i> , Leconte. Kentucky to Michigan, Wisconsin, Illinois, New York, and Southward. | |
| | | 14. <i>Vitis æstivalis</i> , Michaux. Tennessee, Georgia, Virginia, and southward. | |
| | | 15. <i>Vitis Simpsonii</i> , Munson. Florida. | |

Series 6. **Cordifoliæ**, Munson.

Vine: seedlings first year feeble, declining; mature, slender or medium stocky, climbing very high; young tips naked, much extended beyond the full-sized leaves; bark freely shedding in thin brittle plates after first year.

Roots: one-year seedlings enlarging downward a foot or more, except in *V. monticola* axial and tapering; transversely wrinkled; very resistant to phylloxera.

Wood: young, smooth, and terete, except in *V. monticola* thinly pinkish-pubescent in striate lines along the obscure angles; annual, pale or reddish-brown; diaphragm medium thick, bi-concave; tendrils intermittent, long, strong, mostly bifid; buds small, short, subtriangular, brown.

Leaves: stipules short, broad, thinly rusty-tomentose; blade cordate, entire or lobed, plane, smooth, and *shining on both faces*, except along the pubescent ribs and veins; basal sinus Ω -shaped in *V. rubra* and *V. monticola*; Λ -shaped in *V. cordifolia*.

Clusters: in *V. cordifolia* and *V. rubra* medium to large, loose, seldom compound, with long peduncle; in *V. monticola* short, compact, shouldered, with medium to short peduncle.

Berries: small, black, shining, without bloom, except in *V. monticola* larger with bloom.

Seeds: chalaza and raphe prominent in *V. cordifolia* and *V. monticola*, depressed in *V. rubra*.

Germination, foliation, inflorescence, and ripening of fruit very late; cuttings growing with difficulty; little subject to diseases; species all very distinct and well characterized.

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| 6. <i>Cordifoliae</i> | { | 16. <i>Vitis cordifolia</i> , Michaux. Iowa to New York, South to Gulf. |
| | | 17. <i>Vitis rubra</i> , Michaux. (<i>V. palmata</i> , Englm.) Illinois and southward. |
| | | 18. <i>Vitis monticola</i> , Buckley. (<i>V. Texana</i> , Munson.) Southwest Texas. |

Series 7. **Cinerascentes**, Planchon.

Vine: slender, declining first year, becoming a strong grower and climbing very high; young growing tips not enveloped in the quickly unfolding but slowly enlarging leaves.

Roots: one-year seedlings non-axial, enlarging downward, transversely wrinkled, deeply penetrating, resistant.

Wood: young, *densely whitish* or *rusty pubescent*, or *woolly along the angles*; buds *small, subtriangular, acute, brown*, in expanding dull pink or rusty crimson; tendrils intermittent, long, strong, mostly trifid; *mature annual, angled, densely ashy pubescent* or *rusty woolly*; in *V. Virginiana*, round, nearly smooth; diaphragms thick, bi-concave.

Leaves: stipules small; blade long cordate, seldom lobed; basal sinus mostly Λ -shaped in *V. Blancoii* narrowly Ω -shaped, in *V. Berlandieri* sometimes Ω shaped, in (*V. Caribæa* often nearly truncate), plane; upper face rugose, dark, dull green; lower face densely pale, ashy pubescent, rusty, or whitish woolly, the latter in the western Mexico form. In *V. Virginiana* leaves fresh, lively green, with little pubescence along ribs. In *V. Berlandieri* dark, glossy green above and below, with pubescence along ribs.

Cluster: *large to very large*, loose or compact, *compound*; peduncle long; *pedicel slender*.

Berries: very small, with a thin bloom, or shining black, with a pure refreshing vinous taste, intensely acid till very ripe or frosted.

Seeds: small to very small, chalaza and raphe generally prominent, depressed in *V. Virginiana* in all specimens seen.

Germination, foliation, *inflorescence*, and *ripening of fruit very late*; cuttings, growing with difficulty except in *V. Blancoii*, easily; native in low bottoms, or on upland limestone soils.

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| 7. <i>Cinerascentes</i> | { | 19. <i>Vitis Virginiana</i> , Munson. Mountain Valleys south-west Virginia. |
| | | 20. <i>Vitis Berlandieri</i> , Planchon. (<i>V. monticola</i> , Mil.) |
| | | 21. <i>Vitis cinerea</i> , Engelmann. Texas, Indian Territory, Missouri, Illinois, Tennessee, var. <i>Floridana</i> , Munson, Florida. |
| | | 22. <i>Vitis Caribæa</i> , D. C., eastern Mexico, and West Indies. |
| | | 23. <i>Vitis Blancoii</i> , Munson. Sierra Madre Mountains, western Mexico. |

SECTION II.—PUNCTICULOSIS, Munson.

Bark: closely adherent, punctate; pith firm, greenish, continuous through the nodes (without diaphragms); tendrils simple; flower clusters somewhat cymose; seeds oval-elliptical; rim of chalaza depressed, wrinkled transversely.

Series 1. *Muscadinia*, Munson.

Vine: slender, climbing moderately; tips of growing shoots very naked of leaves, these unfolding quickly from the bud but enlarge slowly.

Roots: one year seedlings non-axial, enlarging downward a foot or more from the collar, transversely wrinkled, punctate, pale yellow, resistant; taste pungent.

Wood: hard, short-jointed, angled; tendrils intermittent; buds very small, globose, brown, when unfolding dull brownish green.

Leaves: cordate or round, not lobed, but coarsely toothed, plane; basal sinus A-shaped; both faces smooth lively green.

Cluster: small, loose; peduncle short; pedicel short, medium thick.

Berries: small in *V. Munsoniana*, shining black, without pulp or musky odor or taste, to very large and pulpy, with muskiness, in *V. rotundifolia*, shedding easily in *V. rotundifolia* when ripe, less so in *V. Munsoniana*.

Seeds: very large to medium in *V. rotundifolia*, very small in *V. Munsoniana*.

Germination, foliation, inflorescence, and ripening of fruit, very late; growth from cuttings very difficult, from layers easy; resistant to all maladies; native in rich, well-drained bottom-lands or low uplands.

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| 1. <i>Muscadinia</i> . { | 24. <i>Vitis rotundifolia</i> , Michaux. All Southern States East of 100° longitude and South of 38° latitude. |
| | 25. <i>Vitis Munsoniana</i> , Simpson. Central and South Florida. |